

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A display device comprising:

a display panel having an electrooptic material layer on a glass substrate;

terminals formed on the glass substrate;

a driver integrated circuit mechanically fixed directly on ~~mounted directly over~~ the glass substrate, the driver integrated circuit including bumps that are electrically connected to the terminals; and

a flexible circuit board having electronic components thereon, at least a portion of said circuit board overlapping the glass substrate, said electronic components opposing said driver integrated circuit, the circuit board being connected to said driver integrated circuit.

2. (Currently Amended) A display device comprising:

a display panel having an electrooptic material layer sandwiched between a pair of glass substrates disposed opposite to each other, one of the glass substrates having an extended area that extends integrally from the one of the glass substrates further than an edge of the other glass substrate, said extended area provided in at least a margin of said display panel;

terminals formed on at least one of the glass substrates;

a driver integrated circuit ~~mounted~~ mechanically fixed directly on ~~directly over~~ the extended area of one of the glass substrates, the driver integrated circuit

including bumps that are electrically connected to the terminals; and

a flexible control circuit board having electronic components thereon, at least a portion of said control circuit board overlapping the glass substrate, said electronic components opposing said driver integrated circuit, said control circuit board connected to an input terminal portion of said driver integrated circuit.

3. (Currently Amended) A display device comprising:

a display panel including:

a first glass substrate and a second glass substrate opposed to each other;

first terminals formed on the first glass substrate;

second terminals formed on the second glass substrate;

an electrooptic material layer provided between the first and second substrates;

a first extended area that extends integrally from the first glass substrate further than an edge of the second glass substrate, the first extended area provided in one of adjacent margins of said display panel;

a second extended area that extends integrally from the second glass substrate further than an edge of the first glass substrate, the second extended area provided in the other margin;

scanning electrodes formed on a surface of the first substrate which is opposed to the second glass substrate;

data-signal electrodes formed on a surface of the second substrate which is opposed to the first glass substrate;

a scanning driver integrated circuit connected to said scanning electrodes which is mechanically fixed ~~mounted~~ directly on the first extended area, the scanning integrated circuit including bumps that are electrically connected to the first terminals; and

a data-signal driver integrated circuit connected to said data-signal electrodes which is mechanically fixed ~~mounted~~ directly on the second extended area, the data-signal driver integrated circuit including bumps that are electrically connected to the second terminals; and

a flexible control circuit board having electronic components thereon, at least a portion of said control circuit board overlapping at least one of the first glass substrate and the second glass substrate, said electronic components opposing at least one of said scanning driver integrated circuit mounted in said first extended area and said data-signal driver integrated circuit mounted in said second extended area.

4. (Previously Presented) A display panel according to Claim 2, wherein the input terminal portion of said driver integrated circuit above which said circuit board is mounted is connected to an end of an input wiring portion formed on said extended area in which said driver integrated circuit is mounted, and another end of the input wiring portion is extended to a vicinity of a shorter side of said extended area and is connected to said circuit board.

5. (Previously Presented) A display device according to Claim 1, wherein said circuit board further comprises a circuit-wiring pattern formed on a flexible insulating-resin substrate and electronic components provided for controlling a driving of

said display panel.

6. (Previously Presented) A display device according to Claim 3, wherein said other of said signal-output terminal portion and said scanning-output terminal portion connects to an end of an input wiring portion formed close to a shorter side of the other of said extended areas.

7. (Previously Presented) A display device according to Claim 2, wherein said circuit board has a multilayer structure having an insulating layer interposed between a plurality of wiring layers in which predetermined upper and lower wiring layers are connected via a through hole.

8. (Previously Presented) A display device according to Claim 5, wherein said circuit board includes a flexible input wiring portion.

9. (Original) A display device according to Claim 2, wherein said electrooptic material layer is a liquid-crystal layer.

10. (Original) A display device according to Claim 1, wherein said electrooptic material layer is an electroluminescent light-emitting layer including an electroluminescent material.

11. (Currently Amended) An electronic apparatus comprising:
a display device provided with a display panel having an electrooptic

material on a glass substrate;

terminals formed on the glass substrate;

a driver integrated circuit mechanically fixed directly mounted on an extended area of an edge of the substrate, the driver integrated circuit including bumps that are electrically connected to the terminals, said extended area provided in at least a margin of said display panel;

a flexible circuit board having a control circuit thereon, said control circuit overlapping said driver integrated circuit proximate said extended area; and

an input unit for inputting a signal to said display device;

wherein said display device is accommodated in a casing.

12. (Currently Amended) An electronic apparatus comprising:

a display device having a display panel including:

a first glass substrate and a second glass substrate opposed to each other;

first terminals formed on the first glass substrate;

second terminals formed on the second glass substrate;

an electrooptic material layer provided between the first and second substrates;

a first extended area that integrally extends from the first glass substrate and is provided in one of two adjacent margins of said display panel wherein the first glass substrate extends further than an edge of the second glass substrate;

a second extended area that integrally extends from the second glass substrate and is provided in the other of the two adjacent margins wherein the second

glass substrate extends further than an edge of the first glass substrate;

scanning electrodes formed on a surface of the first glass substrate opposed to the second glass substrate;

data-signal electrodes formed on a surface of the second glass substrate opposed to the first glass substrate;

a scanning driver integrated circuit connected to said scanning electrodes mechanically fixed mounted directly on the first extended area, the scanning driver integrated circuit including bumps that are electrically connected to the first terminals; and

a data-signal driver integrated circuit connected to said data-signal electrodes mechanically fixed ~~which is mounted~~ directly on the second extended area, the data-signal driver integrated circuit including bumps that are electrically connected to the second terminals; and

a flexible circuit board having electronic components thereon, at least a portion of said circuit board overlapping at least one of the first glass substrate and the second glass substrate, said electronic components opposing at least one of said scanning driver integrated circuit mounted in said first extended area and said data-signal driver integrated circuit mounted in said second extended area; and

an input terminal portion of said scanning driver integrated circuit mounted in said first extended area and an input terminal portion of said data-signal driver integrated circuit mounted in said second extended area; and

an input unit for inputting a signal to said display device;

wherein said display device is accommodated in a casing.

13. (Previously Presented) An electronic apparatus according to Claim 11, wherein the input terminal portion of said driver integrated circuit above which said circuit board is mounted is connected to an end of an input wiring portion formed on said extended area in which said driver integrated circuit is mounted, and another end of the input wiring portion is extended to a vicinity of a shorter side of said extended area and is connected to said circuit board.

14. (Previously Presented) An electronic apparatus according to Claim 11, wherein said circuit board further comprises a circuit-wiring pattern formed on a flexible insulating-resin substrate and electronic components mounted thereon for controlling a driving of said display panel.

15. (Previously Presented) An electronic apparatus according to Claim 12, wherein said other of said signal-output terminal portion and said scanning-output terminal portion connects to an end of an input wiring portion formed close to a shorter side of the other said extended area which is adjacent to said one of the extended areas.

16. (Previously Presented) An electronic apparatus according to Claim 11, wherein said circuit board has a multilayer structure having an insulating layer interposed between a plurality of wiring layers in which predetermined upper and lower wiring layers are connected by a through hole.

17. (Previously Presented) An electronic apparatus according to Claim 14,

wherein said circuit board includes a flexible input wiring portion.

18. (Previously Presented) An electronic apparatus according to Claim 11, wherein said electrooptic material layer further comprises a liquid-crystal layer.

19. (Previously Presented) An electronic apparatus according to Claim 11, wherein said electrooptic material layer further comprises an electroluminescent light-emitting layer including an electroluminescent material.

20. (Previously Presented) An electronic apparatus according to Claim 11, wherein the circuit board of said display device includes a flexible input wiring portion for establishing connection to said input unit.

21. (Previously Presented) A display device according to Claim 2, wherein said circuit board further comprises a circuit-wiring pattern formed on a flexible insulating-resin substrate and electronic components provided for controlling a driving of said display panel.

22. (Previously Presented) A display device according to Claim 3, wherein said circuit board further comprises a circuit-wiring pattern formed on a flexible insulating-resin substrate and electronic components provided for controlling a driving of said display panel.

23. (Previously Presented) A display device according to Claim 3, wherein

said circuit board has a multilayer structure having an insulating layer interposed between a plurality of wiring layers in which predetermined upper and lower wiring layers are connected via a through hole.

24. (Previously Presented) A display device according to Claim 6, wherein said circuit board includes a flexible input wiring portion.

25. (Previously Presented) A display device according to Claim 7, wherein said circuit board includes a flexible input wiring portion.

26. (Previously Presented) A display device according to Claim 3, wherein said electrooptic material layer further comprises an electroluminescent light-emitting layer including an electroluminescent material.

27. (Previously Presented) An electronic apparatus according to Claim 12, wherein said circuit board further comprises a circuit-wiring pattern formed on a flexible insulating-resin substrate and electronic components mounted thereon for controlling a driving of said display panel.

28. (Previously Presented) An electronic apparatus according to Claim 12, wherein said circuit board has a multilayer structure having an insulating layer interposed between a plurality of wiring layers in which predetermined upper and lower wiring layers are connected by a through hole.

29. (Previously Presented) An electronic apparatus according to Claim 15, wherein said circuit board includes a flexible input wiring portion.

30. (Original) An electronic apparatus according to Claim 12, wherein said electrooptic material layer is a liquid-crystal layer.

31. (Previously Presented) An electronic apparatus according to Claim 12, wherein the circuit board of said display device includes a flexible input wiring portion for establishing connection to said input unit.

32. (Previously Presented) A display device according to claim 1 wherein:
said extend area is substantially rectangular including a pair of long sides spaced apart by a pair of short sides; and
said other of said signal-output terminal portion and said scanning-output terminal portion extends across one of said short sides.

33. (Previously Presented) A display device according to claim 2 further comprising:

a second extended area where an edge of the other the substrates extends further than an edge of the one substrate, said second extended area provided in at least a margin of said display panel;

wherein said other of said signal-output terminal portion and said scanning-output terminal portion extends to said second extended area.

34. (Currently Amended) A display device comprising:
a display panel having an electrooptical material layer on a glass substrate;
terminals formed on the glass substrate;
a driver integrated circuit mechanically fixed directly mounted on directly over the glass substrate, the driver integrated circuit including bumps that are electrically connected to the terminals; and
a flexible circuit board having electronic components thereon, said electronic components opposing said driver integrated circuit and the circuit board being connected to said driver integrated circuit.

35. (Currently Amended) A display device comprising:
a display panel having an electrooptic material layer on a glass substrate;
terminals formed on the glass substrate;
a driver integrated circuit ~~mounted~~ mechanically fixed directly on ~~over~~ the glass substrate, the driver integrated circuit including bumps that are electrically connected to the terminals; and
a circuit board having electronic components thereon, at least a portion of said circuit board overlapping the glass substrate, said electronic components opposing said driver integrated circuit in an overlapped condition with the driver integrated circuit, the circuit board being connected to said driver integrated circuit.

36. (Previously Presented) A display device according to Claim 1, wherein the electronic component of the circuit board is an integrated circuit.

37. (Previously Presented) A display device according to Claim 1, further comprising an insulation substrate disposed between the driver integrated circuit and the flexible circuit board.

38. (Previously Presented) A display device according to Claim 1, wherein the flexible circuit board connects an input terminal of the driver integrated circuit directly to the electrical component of the circuit board.